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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/030,530	04/15/2002	Wolfram Angerer	P/3013-13	4126

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EXAMINER

VANAMAN, FRANK BENNETT

ART UNIT	PAPER NUMBER
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3618

DATE MAILED: 03/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/030,530

Applicant(s)

ANGERER ET AL

Examiner

Frank Vanaman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 16-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **Continued Examination**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 13, 2004 has been entered.

### **Status of Application**

2. Claims 16-30 are pending.

### **Claim Rejections - 35 USC § 112**

3. Claim 30 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 30, lines 1-2, the recitation of the power supply comprising an internal combustion engine appears to contradict the recitation of the claim from which it depends (claim 29), which recites the power supply as being a fuel cell.

### **Claim Rejections - 35 USC § 103**

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 16-18 and 20-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wright (US 6,181,033, filed 12/1999) in view of Raby (US 3,925,695). Wright teaches an electric drive for a shaft, comprising an electric machine (12, 18) including a stator (14) a rotor (20) to which is connected a drive shaft (26) with an end (right of 26, figure 1) which is connected to the rotor, extending through the electric machine, the rotor, stator and shaft all being coaxial, the motor including a power control unit (mounted to PC board 40) arranged at an end surface of the machine, which controls at least one of speed and torque of the motor (col. 3, lines 8-24 and lines 34-

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47) forming a combination with the motor through mechanical (40, 56, force-fit snap tab 60) and electrical (88) connections. The reference to Wright fails to teach the provision of a braking resistor assembly including plural resistors having a modular construction which allows them to be arrayed along the shaft axis, circumferentially outwardly of the shaft, and having an annular shape which encloses the drive shaft.

Raby teaches an electric drive for a shaft, including a stator (16, 18) a rotor (38, 40) to which is connected a drive shaft (34, 36, 54) which is connected to the rotor, extending through the electric machine, the rotor, stator and shaft all being coaxial, the motor including a resistor unit comprising plural resistors (62, 80, 82, 84, 136, 138, 140, etc.), which may be engaged during a braking procedure in that it is connected both electrically and mechanically in the motor (see figure 4), the resistors having a modular construction which allows them to be arrayed along the shaft axis (see figure 2), circumferentially outwardly of the shaft, and having an annular shape (figure 3), which encloses the drive shaft. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the electric machine taught by Wright with the modular resistor assembly taught by Raby for the purpose of providing a compact resistor arrangement usable with the motor, thus reducing the space required to accommodate both the electric machine and resistors.

While the reference to Wright as modified by Raby fails to explicitly teach an end to the shaft which is connectable to another shaft, the provision of an end of a motor shaft for the purpose of driving a load is so common as to be considered inherent, in that the provision of such a connection is used to allow the motor to drive the load for which it is intended.

As regards claim 27, while the electric machine taught by Wright and modified by Raby is not explicitly referred to as a transverse flux machine, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ a transverse flux machine structure in the arrangement taught by Wright as modified by Raby for the purpose of advantageously employing a transverse flux structure to improve operation.

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As regards claim 28, while the reference to Wright as modified by Raby fails to explicitly teach a power supply system, the motor would be inoperative without such a system, and as such, the provision of a power supply system would be deemed to be well within the skill of the ordinary practitioner for the purposes of allowing the machine to function.

6. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wright in view of Raby and Kinoshita et al. (US 5,517,401). The reference to Wright as modified by Raby is discussed above and fails to teach the controller element connected to the machine, with the controller arranged at an end surface of the machine, on the circumference. Kinoshita et al. teach an electric machine (3) with a controller unit (101) connected electrically and mechanically to the electric machine, arranged proximate an end surface of the machine wherein the circumference of the controller is located on the circumference of the electric machine (see figures 19-22; and col. 9, line 52 through col. 10, line 64). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the electrical machine of Wright as modified by Raby with a controller circuit for operating the motor, wherein the circuit is located proximate an end surface of the machine at its circumference as taught by Kinoshita et al., for the purpose of mounting the circuit close to the machine to reduce line losses and electrical faults, but retain access for maintenance purposes.

7. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wright in view of Raby and Lyons (US 5,950,752). The references of Wright and Raby are discussed above and fail to teach the specific provision of a power supply for the machine, including a fuel cell. Lyons teaches a vehicle drive scheme including both an internal combustion engine (18) and a fuel cell (24) for providing power (through 14) to an electric machine (40) via an electrical coupling (28m). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a vehicle power source including a fuel cell and internal combustion engine as taught by Lyons to operate the motor taught by Wright as modified by Raby for the purpose of providing a

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dual source supply of energy (i.e., the engine and fuel cell) for the purpose of allowing a vehicle to be operated from a fuel cell when it is not feasible to operate it from the internal combustion engine.

8. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wright in view of Raby and Lateur et al. (US 5,823,280). The references of Wright and Raby are discussed above and fail to teach the electric machine as being used in a vehicle power system including a power supply for the machine, and internal combustion engine being physically coupled to the electric machine, wherein the machine can operate as a generator. Lateur et al. teach a parallel hybrid vehicle having an internal combustion engine (22) which is connected to drive a vehicle (through 62, 20), the engine being physically connected to an electric machine (motor/generator 12) through a coupling (82, 83, see figure 3), so as to allow either or both electric machine and engine to drive the vehicle, the electric machine being operable as a generator and connected to a power supply (24) through a controller (16). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the electric machine of Wright as modified by Raby in a power system including a direct coupled internal combustion engine and power supply as taught by Lateur et al., with the machine having a common structure operable as both a motor and generator, for the purpose of providing the compact electric machine in a hybrid vehicle in order to conserve space, by the provision of a more compact motor/controller structure.

#### **Response to Comments**

9. Applicant's comments, filed with the amendment, have been carefully considered. As regards the rejection previously set forth under 35 USC 112, first paragraph, the examiner agrees that the claims as currently written do not warrant a rejection under this statute.

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### Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Naito et al. (US 5,557,181) and Rupp et al. (US 6,175,171) teach electric machines of pertinence.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to F. Vanaman whose telephone number is 703-308-0424. Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is 703-308-1113.

A response to this action should be mailed to:

Mail Stop \_\_\_\_\_  
Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450,

Or faxed to one of the following fax servers:

Regular Communications/Amendments: 703-872-9326  
After Final Amendments: 703-872-9327  
Customer Service Communications: 703-872-9325

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**F. VANAMAN**  
**Primary Examiner**  
**Art Unit 3618**



2/24/05